

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Masanao Kamei, et al. Conf.: 8978

Appl. No.: 10/553,214 Group:

Filed: October 13, 2005 Examiner: Richter

For: ORGANOPOLYSILOXANE HAIR TREATMENT AGENT AND  
HAIR COSMETIC CONTAINING THE TREATMENT AGENT

DECLARATION UNDER 37 CFR 1.132

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Masanao Kamei, Annaka, Gunma Prefecture, Japan, hereby  
declare and state as follows:

I graduated from Saitama University Graduate School,  
Faculty of Science, Applied Chemistry Department, in 1987 to get  
a M.S. degree. After the graduation, I joined Shin-Etsu Chemical  
Co.,Ltd. I have been working on silicone in the Silicone-  
Electronics Materials Research Center. I am a chief scientist in  
the Development Section No.1.

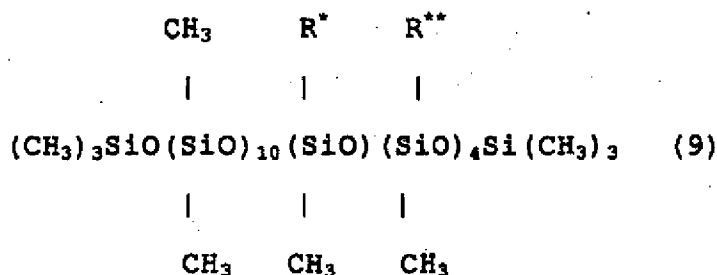
I am an inventor of the United States Patent Application  
No.10/553,214, filed on October 13 2005, entitled  
"Organopolysiloxane Hair Treatment Agent and Hair Cosmetic  
Containing the Treatment Agent."

The following experiments were carried out by me to show that the present invention differs from the invention of Tetsuo Nakanishi (EP1065234), hereinafter referred to as Tetsuo, and that the present invention attains advantages which could not be expected from the invention described in Tetsuo.

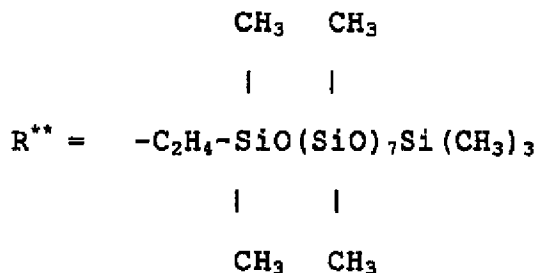
### Experimental

#### 1. Material used

The silicone represented by the following average structural formula (9), hereinafter referred to as silicone (9), was used which is described in the present specification, page 29.



wherein,



#### 2. Powder treatment with the silicone (9)

Titanium dioxide powder having an average diameter of 15 nm, MT-100TV, ex TAYKA Co., was treated at a temperature of 100°C

under reduced pressured to dry. In a reactor, 70 parts by weight of the powder was placed to which 30 parts by weight, which is the maximum amount as described in [0030] in Tetsuo, of the silicone (9) diluted in toluene were gradually added while mixing. Subsequently, the reactor was heated to remove toluene and then to 150°C for 3 hours to effect surface treatment of the powder.

### 3. Preparation of hair treatment agents

Hair treatment agents each having the formulation shown in the Table 1 below were prepared.

Table 1

| Hair Treatment Agent |   | (A) | (B) |
|----------------------|---|-----|-----|
| 1                    | Silicone (9)                                      | 6   | —   |
| 2                    | Titanium dioxide powder treated with silicone (9) | —   | 6   |
| 3                    | Ethanol   | 94  | 94  |

### 4. Hair treatment

A hair bundle of ordinary hair with a length of 20 cm and a total weight of 6.0 g which had been shampooed and breached with a breaching agent was treated with each of the hair treatment agents (A) and (B). Then, the hair bundle was washed and then treated with 1 gram of the hair treatment agent (A) or (B). Each of thus treated hair bundle was shampooed, treated, rinsed and dried.

Subsequently, the process consisting of shampooing, hair treatment, rinsing and drying was repeated 20 times consecutively. The shampoo and treatment used were Supermild shampoo and treatment, both available from Shiseido Co.Ltd.

### 5. Evaluation of Hair

The hair bundles immediately after treated with the hair treatment agent(A) or (B), and those after 20-cycles of the

above processing were compared with an a non-treated hair bundle as a reference in terms of easiness to comb, moisturized feel, softness, and gloss. Results are as shown in the following Table.

Table 2

| Immediately after treatment | (A) | (B) |
|-----------------------------|-----|-----|
| Easiness to comb            | A   | C   |
| Moisturizing effect         | A   | C   |
| Softening effect            | A   | C   |
| Gloss                       | A   | D   |
| After 20-cycle processing   |     |     |
| Easiness to comb            | A   | D   |
| Moisturizing effect         | A   | D   |
| Softening effect            | A   | D   |
| Gloss                       | A   | D   |

## 6. Discussion

As is evident in the above Table 2, the hair treated with the hair treatment agent (B) was inferior to those treated with the hair treatment agent (A) in all the evaluation items. This is mainly due to the powder contained in the hair treatment agent (B). Even the powder is treated with the silicone (9), the silicone (9) is chemically bonded to the powder to lose hydrophilic reactive site as explained in the previous response by the chemical formula, so that the advantages achieved by the silicone (9) itself cannot be attained.

## 7. Preparation of a hair spray

Hair spray was prepared as in the present Example 1 by mixing 5 wt% of the powder treated with the silicone (9) and 95 wt% of ethanol. However, it could not be evaluated because the powder plugged the nozzle of the spray.

The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true.

August 22, 2008  
Date

Masanao Kamei  
Masanao Kamei